REMARKS

The Invention

In general, the invention features an array of transfected eukaryotic cells. The array has at least 96 locations placed at a density of at least 100 locations per square centimeter. Each location has eukaryotic cells that are transfected with one or more defined nucleic acid molecules.

Support for the Amendments

Claim 160 has been amended to recite that the array has at least 96 locations. Support for this amendment is found at page 13, lines 21-23. New claims 237-240 have been added. Support for new claims 237-239 is found at page 38, lines 21-25. Support for new claim 240 is found at page 39, lines 17-26. No new matter has been added.

The Office Action

Claims 160-236 are pending. Claims 178-236 are withdrawn as being directed to nonelected subject matter. Claims 160-177 have been examined on the merits. Claims 160-175 stand rejected under 35 U.S.C. 102(e) as being anticipated by Taylor (U.S. Patent No. 6,103,479). Claims 176 and 177 stand rejected under 35 U.S.C. 103(a) as being obvious over Taylor. Claims 160-175 stand rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-151 of U.S. Patent 6,544,790 ("the '790 patent"), and, lastly, claims 160, 176, and 177 stand rejected for

obviousness-type double patenting over claims 148-151 of the '790 patent. Each of these rejections is addressed in turn.

Rejections Under 35 U.S.C. 102(e)

Claims 160-175 are rejected as being anticipated by Taylor. Applicant respectfully traverses this rejection.

According to the Office, Taylor teaches miniaturized high-throughput cell arrays that anticipate the claimed array. As support for this assertion, the Office point to column 16, lines 44-50, of the '479 patent. The content of this passage does not anticipate the claims. As now amended, the claims require that the array have at least 96 locations at a density of at least 100 locations per square centimeter. The passage relied upon by the Office does not refer to any number of locations or to any array density, let alone to an array having the recited parameters. Rather, the passage describes an array having dimensions of 20 mm x 30 mm that, when imaged, would consist of 1000 pixels x 1500 pixels. In other words, this passage is referring to the resolution that could be achieved using a luminescence reader instrument. Taylor fails to describe an array of at least 96 locations of transfected eukaryotic cells having a density of at least 100 locations per square centimeter, as is now required by the claims. Because Taylor fails to describe every limitation of the claimed invention, Applicant respectfully requests that the rejection of claims 160-175 as being anticipated by the '479 patent be withdrawn.

Rejections Under 35 U.S.C. 103(a)

Claims 176 and 177 are rejected as being obvious over Taylor in view of Montgomery et al. (Proc. Natl. Acad. Sci. USA 95:15502-15507, 1998). The Office asserts that one skilled in the art would be motivated to replace the reporter genes employed by Taylor with the double-stranded RNA and modified nucleic acids of Montgomery. Applicant respectfully traverses this rejection.

Taylor is discussed above. As noted by Applicant, Taylor does not describe an array of at least 96 locations of transfected eukaryotic cells having a density of at least 100 locations per square centimeter, as is required by the claims. This deficiency is not remedied by Montgomery, which teaches the introduction of double-stranded RNA into the nematode *Caenorhabditis elegans*. Because no combination of the cited references teaches or suggests each and every limitation of the claimed invention, the rejection of claims 176 and 177 as being obvious should be withdrawn, and such action is respectfully requested.

Regarding claim 177, which specifies that in at least one location one or more defined nucleic acid molecules has a modified base or backbone, Applicants further notes that, contrary to the assertions of the Office, Montgomery does not describe transfecting cells with nucleic acid molecule having a modified base or backbone. The portion of Montgomery relied upon by the Office describes an *in situ* hybridization protocol in which chemically fixed and permeabilized cells are contacted with a digoxigenin-labeled nucleic acid in order to detect the presence of an RNA transcript. This simply is not the

same as transfection of a cell with a modified nucleic acid molecule, and for this reason as well the rejection of claim 177 as being obvious should be withdrawn.

Even if Taylor described an array having the required parameters (which it doesn't), claims 176 and 177 would still not be obvious over Taylor in view of Montgomery, because the cited references provide no motivation for one to replace the reporter gene employed by Taylor with any other nucleic acid molecule. Applicant's reasons now follow.

Claims 176 and 177 are drawn to a cell array having at least 96 locations at a density of at least 100 locations per square centimeter. In at least one location, the cells are transfected with nucleic acid molecules encoding a double-stranded RNA molecule (claim 176) or a modified nucleic acid molecule (claim 177).

The sole reason Taylor sets forth for transfecting cells is so that "the cells can be modified with luminescent indicators of cell chemical or molecular properties...and analyzed in the living state" (column 12, lines 44-47). To that end, Taylor proposes using cells containing "luminescent reporter genes, although other types of reporter genes...are also suitable." Thus, Taylor is exclusively considering the use or reporter genes, and no other type of nucleic acid molecule. Nor does Taylor suggest modifying the nucleic acid molecule in any manner.

Nothing in either Taylor or Montgomery provides any motivation for one skilled in the art to substitute Montgomery's double-stranded RNA for Taylor's reporter genes. The Office states that one would have been motivated to incorporate a double-stranded RNA to inhibit the expression of a gene of interest, but the Office fails to point to any

support for this proposition in either Taylor or Montgomery. Taylor at no point suggests inhibiting gene expression in a cell array. Montgomery is similarly silent on this proposition, and exclusively discusses inhibiting gene expression in the context of an entire animal.

As is discussed above, Montgomery does not even describe transfecting cells with a modified nucleic acid molecule. Even if Montgomery did, however, there still wouldn't be any motivation to use such a nucleic acid molecule in Taylor's array, because Taylor was focused exclusively on utilizing reporter genes.

Applicant submits that, for the foregoing reasons, one would not have been motivated to use Montgomery's double-stranded RNA in Taylor's cell array. Reconsideration and withdrawal of the rejection of claim 176 as being obvious over Taylor and Montgomery is respectfully requested.

Rejections for Double Patenting

Claims 160-175 are rejected for obviousness-type double patenting over claims 1-151 of the '790 patent. Claims 160, 176, and 177 are rejected for obviousness-type double patenting over claims 148-151 of the '790 patent in view of Montgomery. Without agreeing that these rejections are proper, Applicant submits herewith a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c), and these rejections may now be withdrawn.

CONCLUSION

Applicant submits that the claims are in condition for allowance and such action is respectfully requested. Enclosed are a petition to extend the period for replying for three months, to and including November 22, 2004, because November 21st falls on a Sunday, and a check for $490.00 for the required petition fee. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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